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Before the
Federal Communications Commission
Washington, D.C. 20554

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DEC 19 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of

Federal-State Joint Board on
Universal Service Recommended
Decision

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CC Docket No. 96-45

Comments of Cylink Corporation

Cylink Corporation ("Cylink") hereby submits its comments in response to the Commission's request for comments on the *Recommended Decision* adopted in this proceeding on November 7, 1996. Cylink's comments go to the relative cost of providing digital links to be employed by common carriers to provide service to rural areas and to facilitate the provision of rural health care and distance learning communications. As noted below, the unlicensed spread spectrum non-consumer point-to-point links made possible with Cylink equipment can be installed for about one-half the cost of conventional microwave technology without the additional delays, costs and administrative burdens of the licensing applications process.

Moreover, service can be initiated with this equipment far more rapidly than is feasible with other technologies. While unlicensed spread spectrum links authorized under Part 15 are not a solution for every service problem, this equipment can play a vital role in the provision of T-1 and similar links in a variety of both temporary and permanent installations. As such, the cost of these links should be taken into account as the Commission considers further action in light of comments on the *Recommended Decision*.

Founded in 1984 and based in Sunnyvale, California, Cylink manufactures for use in the

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United States and worldwide a variety of spread spectrum equipment. Cylink currently provides equipment for the support of non-consumer point-to-point links in the 2400 - 2485.5 MHz and 5725 - 5850 MHz bands. This equipment is used by common carriers, industrial concerns, and governments to provide reliable, high quality digital links. At this time, Cylink equipment is marketed pursuant to a Commission waiver that extended rights originally granted under the pre-1990 Part 15 spread spectrum regulations in order for transmitters used in non-consumer point-to-point applications to operate with a maximum output power of one watt with effective radiated power determined by the type of antenna employed. In Comments filed in ET Dockets Nos. 96-8 and 96-102, Cylink has urged the Commission to amend the Rules to regularize the authorization of unlicensed Part 15 equipment of this kind so that the hardware needed to support such links may continue to be made available.¹

In the 5725 - 5850 MHz band, Cylink supplies equipment to support T-1 circuits. These links can provide reliable service for up to 24 miles. Such links typically cost the carrier about \$8,000 per end (i.e. about \$16,000 for a complete circuit), exclusive of tower and site preparation costs which are comparable to licensed microwave facilities. In the 2400 - 2485.5 MHz band,

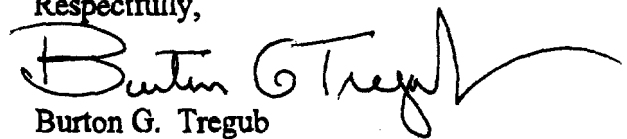
¹Comments of Cylink Corporation, June 19, 1996, ET Docket No. 96- 8, *Amendment of Parts 2 and 15 of the Commission's Rules Regarding Spread Spectrum Transmitters*, and Comments of Cylink Corporation, July 15, 1996, ET Docket No. 96-2, *Amendment of the Commission's Rules to Provide for Unlicensed NII/SUPERNET Operations in the 5 GHz Frequency Range*.

Cylink equipment can support data rates of up to 512 kbps over a distance of 30 miles. The typical cost to the carrier for 2.4 GHz equipment is about \$3,500 per end (i.e. about \$7,000 for a complete circuit). These contrast with typical microwave circuit costs of about \$12,000 - 15,000 per end.

In many situations, unlicensed spread spectrum links of the kind Cylink supports afford economical long term answers to the problem of providing service to rural areas and make it feasible to tie remote clinics to more advanced health care facilities and to link schools and libraries to the Internet. In other circumstances, unlicensed spread spectrum links of this nature afford a means for initiating service on an interim basis while the licensing of other microwave facilities or the installation of fiber or wireline circuits proceeds.

Cylink looks forward to continuing to support common carriers with unlicensed spread spectrum equipment authorized under Part 15 of the Commission's Rules. As carriers wrestle with the challenges presented by universal service requirements, Cylink equipment can be one of many tools used in the efficient provision of service.

Respectfully,



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December 19, 1996

Certificate of Service

I hereby certify that on December 19, 1996, a copy of the attached Comments of Cylink Corporation was served by United States Mail, First Class postage prepaid, on the following, except where service by messenger is shown:

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